Online Manual Not For Resale Purposes

BLITZ
POWER INNOVATION

RACING METER
DCⅡ

Instruction Manual

IMPORTANT - Blitz does not promote the use of this product on public highways. Please obey all local speed laws. Blitz is not responsible for any accidents or tickets while using this products. Blitz products are listed for sale and use for offroad vehicles only. Installation of Blitz products may void factory warranty.

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Notice

Please read and understand this manual before using this product. This manual assumes that you are familiar with typical automotive systems, basic service and repair operations. You should also have the know how to use automotive tools and equipment which are necessary to safely and efficiently perform service operations to a vehicle. Use a factory service manual as a reference. DO NOT attempt to carry out these operations unless you are competent and these assumptions are correct. Many of the procedures or operations will refer to the factory manual. Follow all safety precautions described in the factory service manual for the vehicle you are working on to reduce the possibility of injury to yourself and or others also to avoid the possibility of damage to the vehicle or to render it unsafe. Read this manual to understand how this product works then install it only after you have full read and understand this entire manual. Do not attempt to install or use this product with out through knowledge of how the product works. Please contact Blitz NA or your authorized dealer if there are any questions regarding this product or of its installation. Blitz NA has the right to update, change, modify, discontinue or supersede the product without any prior notice.

WARNING

Ignoring these indications may cause serious injuries or even death, also damage to the product or the vehicle may result causing malfunction. Please read and fully understand this section. Do not operate this product while driving your vehicle. Make sure after installing the product or any of its parts, it does not interfere with your driving or anything related to the vehicles day to day use. Please strap or mount any loose parts or wires securely. Blitz NA will not be responsible for any damages done or caused to the product or the vehicle. The buyer of this product will take full responsibility for any damages. Do not: drop, misuse, and abuse, alter, take apart or modify this product in any way, if it has been the warranty will be void. Please confirm you have all parts that came in the original package without any prior damages, if any parts are missing or damaged please contact your authorized dealer at the place of purchase. If you notice any strange smells or noises coming from the product, please stop use immediately and consult your place of purchase/authorized dealer. Due to the fact the vehicle will need to be on and running to verify the product is working and installed correctly, always perform the installation in a well ventilated area. Bad ventilation may cause serious injuries, harm or even death. Please do not install any of the parts in any area where it may come in contact with any type of water/liquid or any type of high heat. This product is designed for 12V DC use only. Do not attempt to use on 12/24V vehicle or 24V vehicles.

Features of the Racing Meter DC II

Super lightweight compact/low profile design
Weights only 1.34oz and is .8inch thick
Due to size it can be installed virtually anywhere in the vehicle (does not require a lot of depth)
64mm diameter with 60mm area easy to read face
Long life LED illumination with user adjustable brightness (high visibility LED indicators (red, green, yellow)
State of the art microprocessor circuitry
Revolutionary stepping motor technology (1st company to use stepping motor it in a gauge)
Accurate real time monitoring with peak-hold/ warning/recall and record/play back functions
Simple easy to hook-up design (gauges only need to be plugged into LIVE UNIT II/all sensors and harness plug into the LIVE UNIT II)
Daisy chain simultaneous display function (link all meters for 1 touch operation in record/playback mode)
It is possible to daisy chain up to 6 gauges with the use of 2 live units (3 gauges each)
One live unit can support 3 DC II gauges
Boost sensor built into Live Unit II not additional boost sensor is necessary
The boost gauge can read in real time, delay and peak hold (1 sec)
Dual input temperature meter (Ex. Water/Oil/Trans/Air) Additional sensor is necessary to measure 2 inputs (part #19210)
For the SPEED/POWER gauge user can switch back and forth between speed and power measurements by pushing 1 button (On certain vehicles it can also cancel the speed limiter).
The EGT/RPM gauge can switch back and forth between exhaust gas temperature and engine rpm measurements by pushing 1 button
Power and RPM gauge can display in real time and pass/hold
It is possible to utilize high visibility LED indicators (for warning/RPM) with the LIVE UNIT II (available separately Part #19291)
It is possible to use DC II boost, temp, pressure gauges with LIVE UNIT I (not all functions will work)

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PARTS LIST

Live Unit II

Live unit	1pc.	Wire splices	2 pc.
Wire harness	1pc.	Instruction manual	1 pc.
Double sided tape	2pc.	Sticker sheet	1 pc.
Short zip tie	1pc.	Long zip tie	1 pc.

Boost Gauge

Boost gauge	1 pc.	Short zip tie	1 pc.
Boost sensor	1 pc.	Long zip tie	1 pc.
Wire harness	1 pc.	Vacuum hose	1 pc.
Double sided tape	1 pc.	Vacuum "T"	1 pc.

Temperature Gauge (oil, water)

Temperature gauge	1 pc.	Short zip tie	1 pc.
Temperature sensor	1 pc.	Long zip tie	1 pc.
Wire harness	1 pc.	Instruction manual	1 pc.
Double sided Tape	1 pc.		

Pressure Gauge (oil, fuel)

Pressure gauge	1 pc.	Short zip tie	1 pc.
Pressure sensor	1 pc.	Long zip tie	1 pc.
Wire harness	1 pc.	Instruction manual	1 pc.
Double sided tape	1 pc.		

Ex. Temp/RPM Gauge

Ex. Temp/RPM Gauge	1pc.	Wire tie large	1pc.
Ex. Temp sensor(1/8th PT)	1pc.	Wire tie small	1pc.
Ex. Temp sensor harness	1pc.	Double side tape 50x15mm	1pc.
Tachometer wire	1pc.	ECU diagram	1pc.

Speed/Power Gauge

Speed/Power Gauge	1pc.	Wire tie small	1pc.
Double side tape 50x15mm	1pc.	wire splice	1pc.
Wire Tie Large	1pc.	ECU diagram	1pc.

OPTIONAL PARTS

Description		**Specification**	**Part #**
			19291
LED indicators 2 pack (for RPM and warning)	for	M12-1.25	19220
Temperature fitting (replaces stock oil drain plug)		M14-1.25	19221
Temperature fitting (replaces stock oil drain plug)		M16-1.5	19222
Temperature fitting (replaces stock oil drain plug)		M20-1.5	19224
Temperature fitting (replaces stock oil drain plug)		Temp 2 display	19210
Temperature sensor			19290
Multi Stand (window gauge mount)			19160
Meter Holder(surface mount pod ring)			754##
Cooling performer (silicone upper radiator hose with built in temp. adaptor)			1923#

** Cooling performers available for Honda, Acura, Nissan, Toyota, Mitsubishi, Mazda

Oil filter sandwich (can be used for oil pressure and temp readings)

Hint: Using the cooling performer and oil filter sandwich adaptor makes installation of the water/oil temperature and oil pressure sensors a lot easier.(Plus if you need to revert back to stock all you do is swap the parts out).

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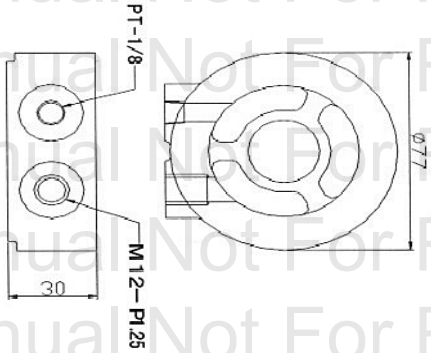
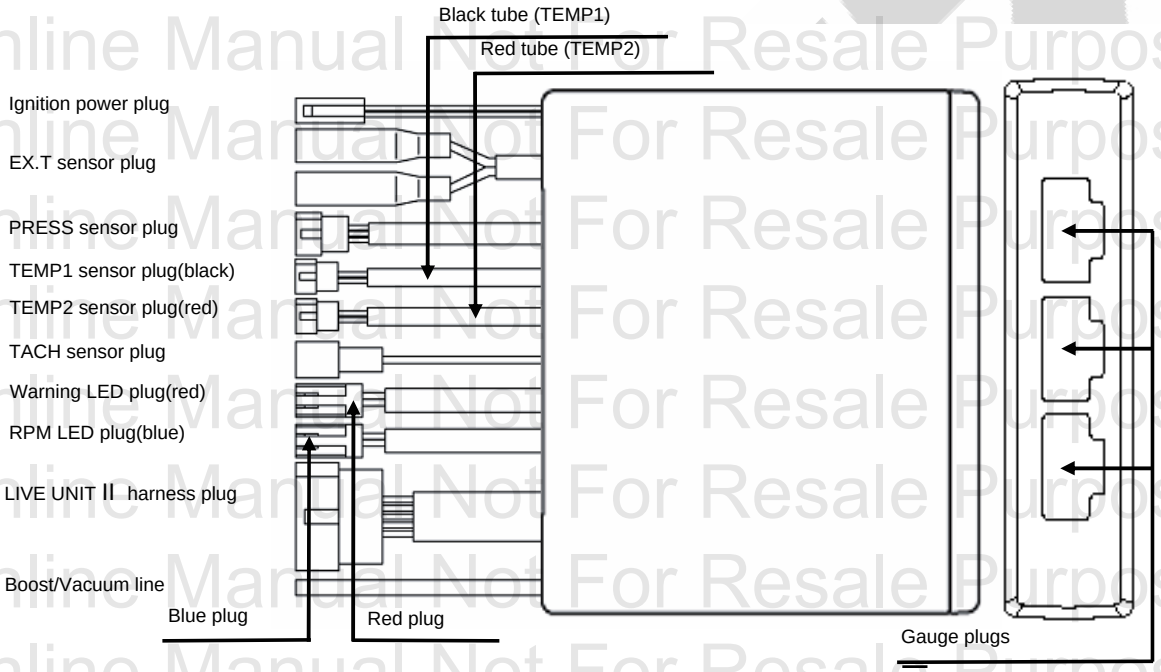
Oil filter sandwich illustration



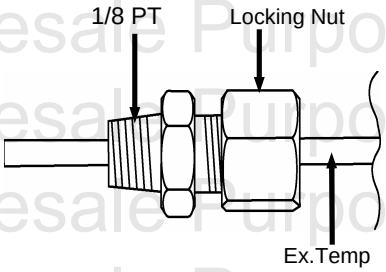
Live Unit II Diagram



* Connect the RED Wire on the ignition harness to a 12 volt ignition power source and the BLACK wire to a ground. Verify connections are correct with a digital multimeter or test light. Use an existing grounding point or choose a soild place free from dirt,grease,oil rust or piant. Connect the sensors and the gauge plugs as shown in the above diagram.

* Find a suitable location for the Exhaust Temp sensor to be installed. After mounting EGT sensor fitting make sure probe is inserted into fitting and is snug with locking coupler.
Once the locking nut is tightened down on the fitting it will NOT be able to be moved again. Make sure it is in a suitiable area and doesent need to be moved.

* The pressure gauge can be used to read fuel or oil pressure.



EGT

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* The temperature gauge can read either oil or water temperature. An additional sensor MUST be added for another reading. Please note that for Temp 1 reads, the temp sensor must be hooked up to the Temp 1 plug with the BLACK wire cover. Temp 2 requires an ADDITIONAL sensor (part # 19210) hooked up to the RED wire cover temperature sensor plug in order to work.
On the Temp gauge when the green Led is on it is reading Temp 2, when the green LED is OFF it is reading Temp 1
Hint: You can use a oil drain adaptor plug(sold seperately). So that you can install the oil temp sensor where the stock oil drain would go(no drilling and easy to install)

* RPM/Tach interface. Please connect this white wire to the tachometer signal coming from the engine to the ECU.
Do not tap directly off the engine or any other location other than on the ECU harness.
If the external RPM LED indicator is installed then it will illuminate also.
Please refer to service manual to locate color and description.

* The red plug is for an option external warning indicator and the blue plug is for the RPM/Tach shift indicator.
Optional LED Warning Indicator part# 19291 is needed(avalible seperately).

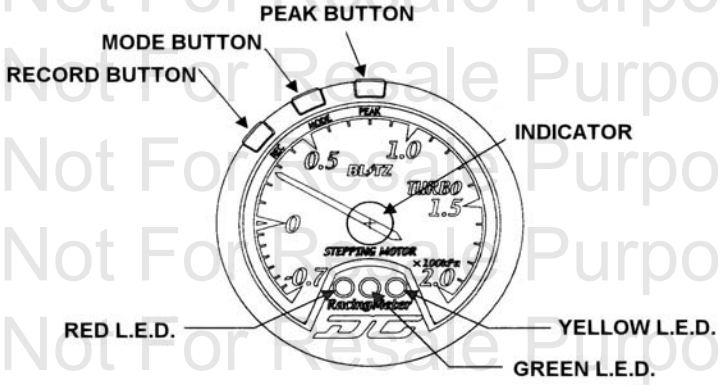
* The 5pin LIVE UNIT II harness plug :
If the car has a speed cut then use both wires if the car doesent then only use the orange wire.
Orange is connected to the speed sensor(engine side) side of the speed sensor wire for the Speed/Power gauge
Brown is connected to the ECU side of the harness.
If the car does not have a speed cut and/or causes a check engine light when the speed sensor wire is cut then you will only use tap the orange wire(w/o cutting) and not use the brown wire.
The orange and brown wires are not needed if the Speed/Power gauge is not used.
Yellow & Green is for 1 touch peak hold capability when using 2 live units.(If only one live unit is bieng used then these wires are not applicable, If you are using 2 live units then you need to plug them into each other)
White is connected to 12V+ constant to reset gauges to 0 when you remove the key.
(If the white wire is not connected the gauge will stay in whatever position it was left in.)

* The vacuum/boost pressure must be drawn from a source behind the throttle body to insure accurate readings. (you can use the line off the fuel pressure regulator)

*** Cooling Performers can be purchased for water temp. readings
*** Oil sandwich adaptors can be purchased for oil temp. and pressure readings
*** Oil drain adaptors can be purchased for oil temp. readings

Do not modify or shorten sensor harnesses. This list consists of the minimum reqiured parts. Depending on the vehicle and method of installation, there maybe additional parts that are needed. Please contact your authorized dealer for any additional parts you may need. Make sure all sensors, wiring, and connections are secure and safe before starting or driving the car.

OPERATING INSTRUCTIONS



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Gauge Functions

Press the MODE button to switch between readings. If the Green L.E.D. flashes once the gauge will read in real time . If the Green L.E.D. flashes twice the gauge will read in delay mode.
If the Green L.E.D. flashes three times, the gauge will read in pass and hold mode.(Boost and Pressure readings only)
Power and RPM can read in realtime or passing/hold mode only. Temp,Speed and EGT can read in real time only.
Everytime the "MODE" switch is pushed it cycles from realtime to delay to passing hold. If MODE switch is held down it goes into warning setting mode.

On the TEMP gauge the Mode switch toggles from Temp 1 to Temp 2
(For TEMP 1 the green LED is off and in TEMP 2 the green L.E.D. is on)
For the Speed/Power gauge each push of the MODE switch toggles from real time speed to real time power to pass and hold power.
(In Speed mode the green L.E.D. is out and in Power mode the green L.E.D is on)
On the EX Temp/REV meter the Mode switch toggles from real time EGT to real time RPM to pass and hold RPM
(In EGT mode the LED is off and in REV mode the green L.E.D. is on)

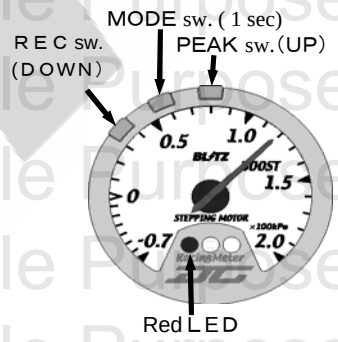
Peak

Push the PEAK button once to show the highest reading achieved. The Yellow L.E.D. will appear. Press the PEAK button again to get out of peak mode. To reset the peak, hold the PEAK button down for 2 seconds when in peak display. The gauge will retain memory of the last highest peak setting until it is reset on the gauge. When 2 sensors are used on the TEMP sensor it can only show the peak value of the highest one(either 1 or 2) not both.

Peak display

Warning

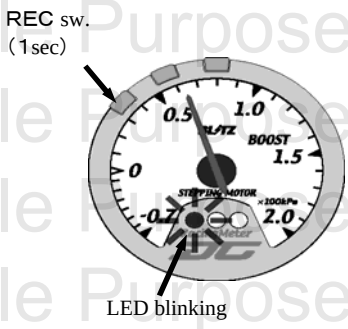
When the preset warning value is achieved the red led on the gauge will illuminate. If optional LED warning indicator is installed it will also light. To set warning press MODE button for 2 seconds. The Red L.E.D. will turn on. Press the PEAK button to move increase warning and press the REC. button to decrease warning. Press the MODE button to set. The Red L.E.D. should turn off.
For PRESSURE METER there is a low and high pressure warning. First set low warning level and then press MODE button to set the high warning level. Press MODE button again to set. If set improperly the Red L.E.D. will stay on. If optional external warning LED is installed it will also illuminate.** The LOW pressure warning MUST be set before HIGH pressure warning. On the TEMP gauge the warning value applies to both sensors at the same time it cannot distinguish between temp 1 or temp 2. (It is not possible to set each warning seperately)



Set Warning

Record

Press and hold Record button for 2 seconds in order to for the gauges to record. The red L.E.D. will flash continuously while recording. Press the Record button again to stop recording. All L.E.D. should be off when not recording. The Record feature can record up to 99 seconds. After aproximately 89 seconds the red L.E.D blinks quickly to inform it is nearing the end. You may also turn off the recording by pushing the REC switch. Until new information is recorded over, it will hold memory of the last recorded information. If the power source is interupted (ignition is turned off) while recording the data recored will be deleted.



Record function

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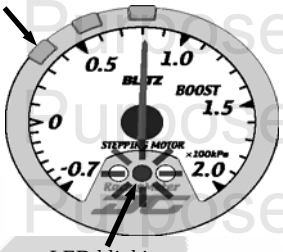
Replay

Press and hold the REC. button down for 4 seconds and the gauges will all replay. (the green L.E.D will be blinking)While in Replay mode the user can press the MODE button once to show replay in twice real time speeds. In replay mode the Green L.E.D. will be flashing. To stop replay mode press the PEAK button once or wait for replay to end. When multiple meters are connected(daisy-chained) it is possible to do one touch operation. Also when making them replay/record at the same time. User will still need to operate the warning/peak display functions seperately since these functions are not linked.
On the TEMP gauge if the TEMP 2 reaqding is higher than the TEMP 1 it will not operate correctly.

REC sw.
（3sec）



LED blinking

Replay function

Contrast display

Hold the MODE button down for 4 seconds, till the Red, Green, and Yellow L.E.D. appears. Then press the PEAK button to make the display brighter or the REC. button to make the display darker. Press the Mode button till the Red L.E.D. disappears. Gauge will be at maximum reading to indicate full brightness and at its lowest setting for minimun dimness.

Programming/Calibration Instructions for Speed/Power meter

Speed and power readings will not be accurate if the vehicle's speed signal value and the speed inspection value on the Speed/Power meter do not match. Test drive vehicle to see if the Speed/Power meter and vehicles speedometer match. If it does not it may be necessary to calibrate the gauge to the vehicle.
Press and hold down the PEAK button while turning the ignition on. Release after guage goes through self test mode.
(the green and red L.E.D. lights will blink. Needle will point to 40km/h)
Pushing the PEAK switch will toggle from 40km/h to 80km/h to 2P to to 4P to 8P and 16P (pulses)
Pushing the REC switch will cause it to toggle backwards from 16P to 40km/h

Speed setting

Push down PEAK with IGN on

LED blinking

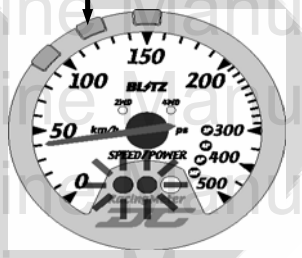
There is 3 ways to calibrate the meter:
1. If you know the output pulses from the car you can choose from 2P,4P,8P and 16P. Push the MODE switch to select the setting(gauge will self test then point to zero)
2. Drive the vehicle at a constant 40km/h(25mph) then push MODE button to set.
3. Drive the vehicle at a constant 80km/h(50mph) then push MODE button to set.
We recommend the 80km/h(50mph) calibration for the most accurate results.
Sometimes under varying loads there may be a different reading from the factory speedometer compared to the Speed/Power Meter this is normal and not a malfunction. If the variation is a considerable difference then you may need to recalibrate.

Push REC for down

Press PEAK for up

When MODE switch is pushed, Vehicle speed pulse function ends and Speed calibration starts

Push MODE to set.



Speed calibration

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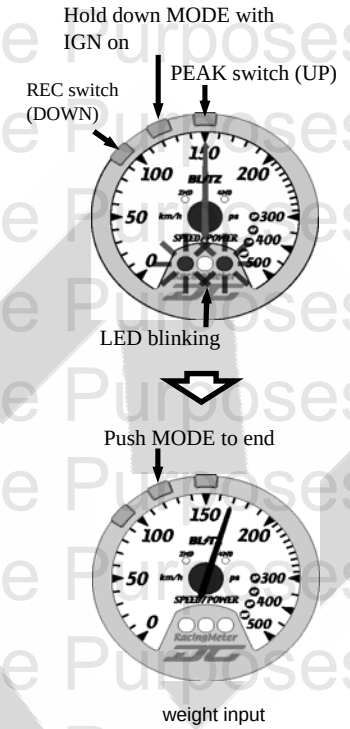
Weight Calibration

It is necessary to input the vehicles weight for acurate horsepower readings. Hold the MODE switch when turing on the ignition to go into weight input mode. The red and yellow L.E.D.s will be blinking the needle will point to input weight. (For instance: If it is pointing at 150km/h that means its weight is 1500kg)
Use the PEAK switch to raise and the REC switch to decrease weight. Example if the vehicles weight is 2000kg(4400lbs) The needle should point at 200km/h.
Make sure the input is as accurate as possible. If the correct weight is not inputted the gauge will not measure correctly!!! Hint:1kg=2.2lbs
For the most acurate input please weight vehicle at a public weight station with driver in car. Make a note of the amount of fuel in vehicle as a full tank of gas weight is drasticly different than compared to a empty tank of gas. Which may alter the readings from the meter.
In order to eliminate misreadings from wheel spin there is a slight delay at the beginning when the gauge is reading horsepower.

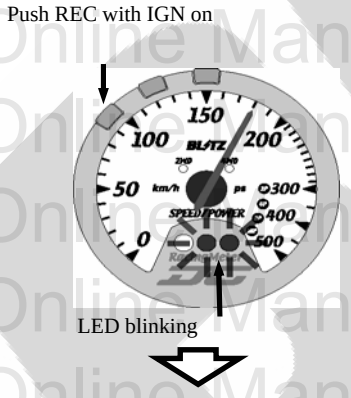


Driveline/Power Loss Correction

To program driveline hold down Rec switch when turning on ignition. After self test green and yellow L.E.D.s will blink. The needle will point to either 2WD or 4WD.
** In the case of the Nissan Skyline GT-R and/or any other type of car that has a torque split type driveline use the 2WD setting.
Using the PEAK and REC buttons you can switch back and forth. Set to correct driveline by pushing the MODE switch.
After pushing the MODE switch driveline selection ends and it becomes Power/ Loss correction setting.
You can use the PEAK switch to increase the values and the REC switch to decrease it. 100km/h is the equivalent of 0. Each push of the PEAK button increases the correction by 1 making 400km/h = +30. Pushing the REC button decreases the power loss correction. It is posssible to go as far as -10 on the gauge. -10 =0 on the gauge.
After setting the power loss correction push the MODE switch to end programing.

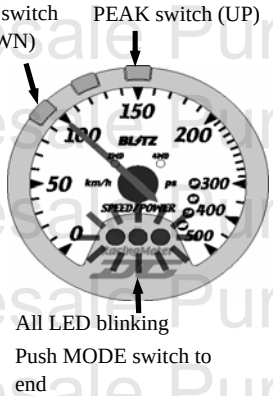
These references are for factory stock vehicles. If the vehicle has been modified in anyway including, aero components and power improvements it will cause incorrect readings. Also if vehicle has larger/smaller diameter wheels, this will also cause incorrect readings. You can use the Power Loss correction to correct this.

Resistance Correction



Driveline selection

Power Loss correction



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Power/Loss correction List

Vehicle Type		Settings	
Passenger vehicles	**Examples**	**2WD**	**4WD**
under 1000cc		1	1
1000cc - 1600cc Naturally Aspirated	All Corolla/Civic/CR-X/87-89 Integra/ Mirage/Mx-5-Roadster/	-2	-2
1601cc to 3000cc Naturally Aspirated/ All Turbo/ Supercharged	NSX/S2000/GTO/RX-7/MR-2/MA-70 Celica/Aristo/MR-S/IS300-200/Eclipse Skyline/S13-S14/Imprezza/Z32/Lancer/	0 0	0 0
Sedans		2	2
Stationwagon	Xb/Xa/Alero	2	2
Mininvans	Rav 4/MPV/CR-V/Element	3	3
SUV	Grand Vitara	5	5
RV	Landcrusier/4Runner/Montero	8	8
Other	*JZA80 Supra TT 93~	-5	-5

***For vehicles that have speedcut limiters.**

Speed Limit setting

Initial value is set at 170km/h(107mph)

If the brown wire on the LIVE UNIT II harness is not used or the vehicle does NOT speed cut, this function is NOT necessary. Please do not test on public highways this function is designed for off-road use vehicles such as track/race vehicles on closed curcuits and race/speed ways.

Push the PEAK and MODE buttons while turning on the ignition. Green and yellow L.E.D.s should be blinking alternately. Needle should point to speed limit reading.

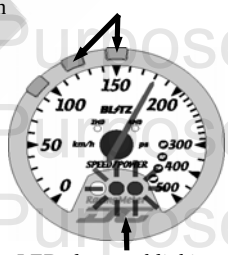
Using the PEAK and Rec switches more the needle up and down to the desired setting for the speed cut. Setting the needle to 0 (farthest location counter-clock wise) will disable the speed limiter. Push MODe switch to set and return to real time monitoring.

Note: There are times on certain cars where the speed cut function may not work.

Warning: Do not verify or test the speed cut function on a public road. Please consult a BLITZ authorized dealer for any assistance you may need.

Speed

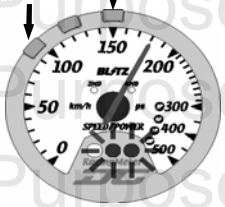
Pushing PEAK and MODE switch with IGN on



LED alternate blinking

REC switch (DOWN)

PEAK switch (UP)



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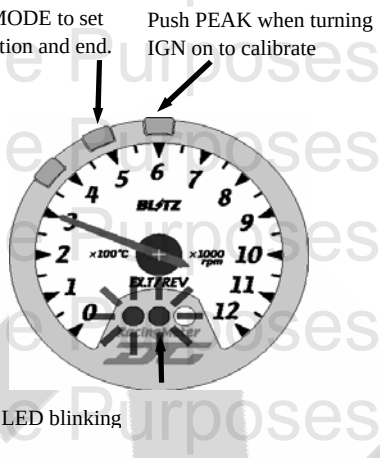
REV Meter Calibration

The gauge is preprogramed for 4cyl applications. To change to 6cyl. push down the REC switch when the ignition is turned on. To change back to 4cyl hold MODE switch down when you turn the ignition on.
To ensure accurate readings make sure you calibrate the gauge.
Push the PEAK switch when you turn on the ignition to go into calibration mode. The red and green L.E.D.s blinks and the needle points to 3000rpm. After the engine has warmed up to normal operating temperature rev the engine up to 3000rpm. When the factory tachometer and RPM meter match push MODE to set and calibration mode ends.
Sometimes under varying loads there may be a different reading from the factory tachometer compared to the Ex Temp/REV Meter this is normal and not a malfunction. If the variation is a considerable difference then you may need to recalibrate.



Engine RPM calibration

Ex.Temp/REV Warning

After ignition is turned on and meters have gone through the self-test mode Hold down MODE button for 1 sec. Red L.E.D. should light up. Use PEAK for up and REC for down to set RPM warning level. Push MODE 2x to set and exit programming mode.

Quick Reference Chart

MODES	OPTIONS	BUTTONS TO PRESS	LED STATUS(on gauges)
Reading displays (boost and pressure only)	Real time Delay mode Pass and hold	Press MODE once	Green L.E.D. Flash 1x Green L.E.D. Flash 2x Green L.E.D. Flash 3x
Speed and Ex. Temp Meter only	Real time	Press MODE once	Green L.E.D. Flash 1x
Power and RPM meter only	Real time Pass and hold	Press MODE once	Green L.E.D. Flash 2x then stays on Green L.E.D. Flash 3x then stays on
Peak hold	Display Reset	Press PEAK once Hold PEAK down for 2 sec.	Yellow L.E.D. on Yellow L.E.D. off
Warning	Display Set	Press MODE for 1 sec. Press PEAK Button to increase Press REC. button to decrease	Red L.E.D. on Red L.E.D. on Red L.E.D. on
Replay	To record To Stop record To Replay To Replay twice speed To Stop replay	Press REC. for 2 sec. Press REC. button Press REC. for 4 sec. Press MODE. while in replay mode Press PEAK button	Red L.E.D. Flash Red L.E.D. off Green L.E.D. Flash Green L.E.D. Flash faster All L.E.D.s off
Contrast	Gauge contrast	Press MODE button for 4 sec. Press PEAK increase Press REC. to decrease	All L.E.D.s will be on
Temperature toggle (only on temp gauge)	2 temp sensors are required	Press MODE button	Green L.E.D. will be off for temp 1 Green L.E.D. will be on for temp 2

Note: Regarding the Boost meter.
There are times when the needle/pointer on the boost gauge may not return to 0 after self test.
To "Zero" in the gauge hold down PEAK and REC switch on the boost gauge when you turn on the ignition. All L.E.D.s will light up. Use the PEAK button to raise and the REC button to lower the needle/pointer to the proper location. Push the MODE switch to return to exit programming and return the gauge to real-time monitoring.

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